

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for communicating data from a first compute node of a computer system to a second node of the computer system, the computer system comprising multiple compute nodes, including the first and second compute nodes, interconnected by an inter-node communication network ~~to a second one of the multiple compute nodes,~~ the method comprising:

placing the data on a full-duplex packetized interconnect directly connecting a CPU of the first compute node to a first network interface of the first compute node, the first network interface directly connected to the inter-node communication network;

receiving the data at the first network interface; and,
transmitting the data from the first network interface to a second network interface of the second compute node by way of the inter-node communication network.

2. (Currently Amended) A method according to claim 1 wherein the first network interface and the CPU are the only devices configured to place data on the packetized interconnect.

3. (Currently Amended) A method according to claim 1 comprising transmitting the data from the first network interface to the second computer node by way of a full-duplex communication link of the inter-node communication network.

4. (Currently Amended) A method according to claim 3 comprising passing the data through a buffer at the first network interface before transmitting the data.

5. (Currently Amended) A method according to claim 1 comprising, at the first network interface, determining a size of the data and, based upon the size of the data, selecting among two or more protocols for transmitting the data.

6. (Original) A method according to claim 5 wherein the two or more protocols comprise an eager protocol and a rendezvous protocol.

7. (Currently Amended) A method according to claim 6 comprising, upon selecting the rendezvous protocol, automatically generating a Ready To Send message at the first network interface of the first compute node.

8. (Original) A method according to claim 1 wherein the data comprises a raw ethernet datagram and transmitting the data comprises encapsulating the raw ethernet datagram within one or more link layer packet headers.

9. (Original) A method according to claim 8 wherein the link layer packet headers comprise InfiniBand™ link layer packet headers.

10. (Original) A method according to claim 1 wherein the data comprises a raw internet protocol datagram and transmitting the data comprises encapsulating the internet protocol datagram within one or more link layer packet headers.

11. (Currently Amended) A compute node for use in a multi-compute-node computer system; the compute node comprising:
- a CPU;
 - a first network interface; and,
 - a dedicated full-duplex packetized interconnect directly coupling the CPU to the first network interface
- wherein the first network interface is operable to exchange data with network interfaces of other compute nodes by way of an inter-node communication network.
12. (Currently Amended) A compute node according to claim 11 wherein the dedicated packetized full-duplex interconnect is not shared by any devices other than the CPU and the first network interface.
13. (Original) A compute node according to claim 11 comprising a memory, and a facility configured to allocate eager protocol buffers in the memory and to automatically signal to one or more other compute nodes that the eager protocol buffers have been allocated.
14. (Original) A compute node according to claim 13 comprising a facility configured to automatically associate memory protection keys with the eager protocol buffers and a facility configured to verify memory protection keys in incoming eager protocol messages before writing the incoming eager protocol messages to the eager protocol buffers.
15. (Currently Amended) A compute node according to claim 11 wherein the network interface comprises a hardware facility at the first network interface configured to encapsulate data

received on the packetized interconnect in link layer packet headers.

16. (Currently Amended) A compute node according to claim 11 wherein the first network interface comprises a buffer connected to buffer outgoing data.

17. (Currently Amended) A compute node according to claim 11 comprising a plurality of CPUs each connected to the first network interface by a separate dedicated full-duplex packetized interconnect.

18. (Currently Amended) A compute node according to claim 11 wherein the CPU is connected to each of a plurality of network interfaces by a corresponding one of a plurality of dedicated full-duplex packetized interconnects.

19. (Currently Amended) A compute node according to claim 11 wherein the first network interface comprises a facility configured to determine a size of data to be transmitted to another compute node and, based upon the size, to select among two or more protocols for transmitting the data to the other compute node.

20. (Currently Amended) A computer system comprising a plurality of compute nodes according to claim 11 interconnected by [[an]] the inter-node data communication network, the inter-node data communication network providing at least one full-duplex data link to the network interface of each of the plurality of nodes.